

CLAIMS

What is claimed is:

1. A hand held tool for scarifying an inner cylindrical surface of a fitting and an outer cylindrical surface of a tubing end, comprising:

a body having first and second scarifying portions interconnected by an intermediate portion, said body having a front side and a rear side;

each of said scarifying portions having a respective inner surface scarifying brush projecting from said front side;

each of said scarifying portions having a cylindrical recess within said front side supporting a respective outer surface scarifying brush; and

a handle rotatably attached to said intermediate portion and projecting from said rear side, said handle having a rotational axis generally perpendicular to said rear side.

2. The tool of claim 1, wherein said inner surface scarifying brushes are of different diameters sized for scarifying fitting portions of two different diameters, respectively, and wherein said outer surface scarifying brushes are of different diameters sized for scarifying tubing ends of two different diameters, respectively.

3. The tool of claim 1, which further comprises a deburring blade attached to said body and having a deburring blade axis generally parallel to but spaced from the rotational axis of said handle.

4. The tool of claim 1, wherein
said intermediate portion of said body has a deburring recess extending between said front side and said rear side and large enough to clear a tubing end; and which further comprises a deburring blade attached to said body, said deburring blade having a deburring blade axis generally parallel to but spaced from the rotational axis of said handle, and positioned within the deburring recess.

5. The tool of claim 4, wherein the deburring recess is generally semicylindrical.

6. The tool of claim 4, wherein the deburring blade axis is approximately midway between said outer surface scarifying brushes.

7. The tool of claim 1, wherein said body is elongated, has a body axis extending generally between said scarifying portions, and has a center of gravity approximately midway between said scarifying portions; and wherein

the rotational axis of said handle lies in a plane perpendicular to the body axis and is offset from the center of gravity in a direction perpendicular to the body axis;

whereby, when said tool is grasped by said handle with the axis of said handle generally horizontal, said body rotates by gravity to an orientation in which the body axis is approximately horizontal.

8. The tool of claim 7, which further comprises a boss on said rear side of said body coaxial with the rotational axis of said handle, said boss having a surface which the thumb of a user's hand can engage to serve as a stabilizing brake against rotation of said body relative to said handle.

9. The tool of claim 7, which further comprises a deburring blade attached to said body and having a deburring blade axis generally parallel to but spaced from the rotational axis of said handle in a direction perpendicular to the body axis.

10. A hand held tool for scarifying an inner cylindrical surface of a fitting, comprising:

a body having first and second scarifying portions interconnected by an intermediate portion, said body having a front side and a rear side;

each of said scarifying portions having a respective inner surface scarifying brush projecting from said front side; and

a handle rotatably attached to said intermediate portion and projecting from said rear side, said handle having a rotational axis generally perpendicular to said rear side.

11. The tool of claim 10, wherein said inner surface scarifying brushes are of different diameters sized for scarifying fitting portions of two different diameters, respectively.

12. The tool of claim 10, wherein said body is elongated, has a body axis extending generally through said scarifying portions, and has a center of gravity approximately midway between said scarifying portions; and wherein

the rotational axis of said handle lies in a plane perpendicular to the body axis and is offset from the center of gravity in a direction perpendicular to the body axis;

whereby, when said tool is grasped by said handle with the axis of said handle generally horizontal, said body rotates by gravity to an orientation in which the body axis is approximately horizontal.

13. The tool of claim 12, which further comprises a boss on said rear side of said body coaxial with the rotational axis of said handle, said boss having a surface which the thumb of a user's hand can engage to serve as a stabilizing brake against rotation of said body relative to said handle.

14. A hand held tool for scarifying an outer cylindrical surface of a tubing end, comprising:

a body having first and second scarifying portions interconnected by an intermediate portion, said body having a front side and a rear side;

each of said scarifying portions having a cylindrical recess within said front side supporting a respective outer surface scarifying brush; and

a handle rotatably attached to said intermediate portion and projecting from said rear side, said handle having a rotational axis generally perpendicular to said rear side.

15. The tool of claim 14, wherein said outer surface scarifying brushes are of different diameters sized for scarifying tubing ends of two different diameters, respectively.

16. The tool of claim 14, which further comprises a deburring blade attached to said body and having a deburring blade axis generally parallel to but spaced from the rotational axis of said handle.

17. The tool of claim 14, wherein

said intermediate portion of said body has a deburring recess extending between said front side and said rear side and large enough to clear a tubing end; and which further comprises

a deburring blade attached to said body, said deburring blade having a deburring blade axis generally parallel to but

spaced from the rotational axis of said handle, and positioned within the deburring recess.

18. The tool of claim 17, wherein the deburring recess is generally semicylindrical.

19. The tool of claim 17, wherein the deburring blade axis is approximately midway between said outer surface scarifying brushes.

20. The tool of claim 16, wherein said body is elongated, has a body axis extending generally through said scarifying portions, and has a center of gravity approximately midway between said scarifying portions; and wherein

the rotational axis of said handle lies in a plane perpendicular to the body axis and is offset from the center of gravity in a direction perpendicular to the body axis;

whereby, when said tool is grasped by said handle with the axis of said handle generally horizontal, said body rotates by gravity to an orientation in which the body axis is approximately horizontal.

21. The tool of claim 20, which further comprises a boss on said rear side of said body coaxial with the rotational axis of said handle, said boss having a surface which the thumb of a user's hand can engage to serve as a stabilizing brake against rotation of said body relative to said handle.

22. The tool of claim 20, which further comprises a deburring blade attached to said body and having a deburring blade axis generally parallel to but spaced from the rotational axis of said handle in a direction perpendicular to the body axis.

23. A hand held tool for scarifying an inner cylindrical surface of a fitting and an outer cylindrical surface of a tubing end, comprising:

a body having a front side, a rear side, and first and second scarifying portions;

each of said scarifying portions having a respective inner surface scarifying brush projecting from said respective portion of said front side, said inner surface scarifying brushes having respective axes which are parallel to each other;

each of said scarifying portions having a cylindrical recess within a respective portion of said front side supporting a respective outer surface scarifying brush, said outer surface scarifying brushes having respective central axes which are parallel to each other and to the axes of said inner surface scarifying brushes; and

a handle rotatably attached to said body and projecting from said rear side, said handle having a rotational axis lying in a first rotational axis plane which is intermediate said inner surface scarifying brushes, perpendicular to a line between said inner surface scarifying brushes, and parallel to the axes of said outer surface scarifying brushes, and also lying in a second rotational axis plane which is intermediate said outer surface scarifying brushes, perpendicular to a line between said outer surface scarifying brushes, and parallel to the central axes of said outer surface scarifying brushes.

24. The tool of claim 23, wherein the first and second rotational axis planes are substantially coincident.

25. The tool of claim 23, wherein said inner surface scarifying brushes are of different diameters sized for scarifying fitting portions of two different diameters, respectively, and wherein said outer surface scarifying brushes

are of different diameters sized for scarifying tubing ends of two different diameters, respectively.

26. The tool of claim 23, which further comprises a deburring blade attached to said body and having a deburring blade axis generally parallel to but spaced from the rotational axis of said handle.

27. The tool of claim 26, wherein the deburring blade axis is approximately midway between said outer surface scarifying brushes.

28. The tool of claim 23, wherein said body is elongated, has a body axis extending generally through said scarifying portions, and has a center of gravity approximately midway between said scarifying portions; and wherein

the rotational axis of said handle lies in a plane perpendicular to the body axis and is offset from the center of gravity in a direction perpendicular to the body axis;

whereby, when said tool is grasped by said handle with the axis of said handle generally horizontal, said body rotates by gravity to an orientation in which the body axis is approximately horizontal.

29. The tool of claim 28, wherein which further comprises a boss on said rear side of said body coaxial with the rotational axis of said handle, said boss having a surface which the thumb of a user hand can engage to serve as a stabilizing brake against rotation of said body relative to said handle.

30. The tool of claim 28, wherein which further comprises a deburring blade attached to said body and having a deburring blade axis generally parallel to but spaced from the

rotational axis of said handle in a direction perpendicular to the body axis.